STRUCTURAL ENGINEERING SOCIETY
NEW ZEALAND

SESOC Higher Qualification & Improved Practice

Discussion Paper

Foreword

Events of recent years have placed the structural engineering profession in the spotlight to an extent seldom seen in New Zealand. While there have been no hard conclusions drawn, there has been significant disquiet with regard to engineering practice and competence, from both outside the profession and within. There has been criticism of the CPEng qualification, although this is not always specific as to whether it is the assessment process or the level of the qualification that is at question. There have been even more concerns directed at the Building Consent review process, although that is not strictly relevant to this paper.

In 2012, the Canterbury Earthquakes Royal Commission published a series of recommendations in its final report, including a number of measures aimed at raising the level of review and qualifications required of engineers in responsible positions for the design of complex structures. As the technical society most directly affected by these recommendations, the SESOC Management Committee directed the formation of a Working Group to investigate alternatives.

It should be of interest to all of our membership, as well as to the wider professional engineering community, that the Government has also turned its attention to this issue. A review of the regulation of the engineering profession is already in its early stages. While the course of this review has a long way to run, there is an implicit challenge ahead of the profession – regulate or be regulated. We are currently a self-regulating profession and one of the responsibilities of a self-regulating profession must be that it critically reviews its internal processes. Arguably SESOC has jumped the gun with this review, but it could also be considered that we owe it to those that lost their lives or livelihoods in the Canterbury earthquakes to be proactive and to provide some leadership in this matter.

A possibly critical point to consider is that a substantial part of the professional engineers' skill lies in applying judgement in the solution of technically complex problems. Greater regulation imposed from without is likely to lead to an erosion of the capacity for engineers to use that judgement, i.e. we may be reduced to the role of technician within our own discipline.

This paper has been written from the assumption that a higher level qualification is required and has therefore focused primarily on the forms that a higher qualification may take, and the means for its evaluation. The Working Group has investigated systems in use in other jurisdictions outside New Zealand and has drawn heavily on this in forming its recommendations. Although there may be aspects to the recommendations that are unique, in most respects these recommendations are simply following international precedent.

It is important also to note that the Working Group has provided a suite of recommendations which they consider should be adopted in full in order to raise standards to a suitable level. Whilst some of the recommendations may be applied individually, the Working Group considers that the full benefit of the proposed changes will only accrue if all of the steps are followed.

In the past, there has been resistance to major change to the CPEng qualification. Much of this has been practically based, noting that the CPEng qualification is available to all engineers and therefore considerably broader in scope than a pure structural qualification. In addition, it is an 'entry level' professional qualification. Consideration of change to structural engineering qualifications must acknowledge the role of CPEng in the other practice areas.

SESOC members are invited to consider this topic from a wide perspective, possibly addressing some or all of the following questions:

- Does our existing engineering training system achieve consistent outcomes to a satisfactory standard? If not, what changes may be required?
- Does the profession truly need a higher qualification than the current combination of Washington Accord degrees, CPEng (noting that CPEng is effectively an 'entry level' qualification) and the Code of Ethics that accompanies it?
- Do professional engineers currently live up to their obligations in respect of the Code of Ethics, with respect to their dealings with clients, the public and other professionals? If not, are the problems widespread; and how should they best be dealt with?
- If a higher qualification is felt to be needed, what form might it best take, noting the recommendations of the Working Group? In that regard, consideration may be given to:
    - Frequency of reassessment (interview or examination).
    - What level the 'bar' should be set at.
    - How the qualification may be administered
- If a higher qualification is to be introduced, how restrictive should it be? Considering:
    - The degree of complexity or size of projects that may trigger the requirement for a higher qualification
    - The balance between responsible supervisor (the Engineer of Record in some jurisdictions) and designer – should both be qualified to the higher level, or only the supervisor?

On behalf of all of the membership of SESOC, I would like to thank the Working Group for their significant contribution to this important topic. It is important that our membership now consider this topic equally deeply and express their views back to the Management Committee.

When our members' comments have been received, the Management Committee intention is to attempt to incorporate those comments into a final draft of this paper, which will then be presented to IPENZ and MBIE as the structural engineering profession's recommendation on this matter. While it is acknowledged that there may be a widely disparate range of views on this topic, it is the Management Committee's hope that a clear consensus may be reached that will satisfy the majority of the profession.

SESOC members are invited to send their submissions to editor@sesoc.org.nz, with the period for submissions closing on October 19th, 2013. The paper will also be given to the other related Technical Societies for their consideration.

Thanks in advance for your careful consideration of this vital topic.

John Hare
President

2 September, 2013.